



Scope of Works

Chancery S-NCh Chilled Water System Backwash, filtering and glycol boost

May 1, 2023

Version: B

Section I. – Table of contents

Contents

Section I. – Table of contents	2
Section II. – General.....	4
Introduction.....	4
Project location	4
Summary of works	4
Period of performance	5
Section III. – Technical requirements	6
General	6
Order of precedence.....	6
Pathways.....	Error! Bookmark not defined.
Section IV. – Contract startup.....	8
Key contractor personnel	8
Documentation.....	8
Permits and responsibilities.....	8
Regulation requirements	9
Handover of building site.....	9
Quality of works	9
Section V. – Construction.....	10
On-Site Mobilization.....	10
General.....	10
Job Site Utilization Plan.....	10
Routine Progress Meetings:.....	10
Escorts	10
Lay-Down Area	10
Trash, Waste, and Debris.....	11
Cleanliness.....	11
Bathrooms	11
Arrival and Departure.....	11

Delivery of Material, Tools, and Supplies.....	11
Hot Work Permits	11
Temporary structures, scaffoldings.....	12
Electrical Shutdowns.....	12
Water Shutdowns.....	12
After-Hours Work	12
Building Maintenance	12
Inspection	12
Utilities	12
Security, and other requirements	12
Materials:.....	13
Hazardous Materials	13
Inspection and Acceptance by COR:.....	13
Demolition and Construction activities.....	13
Contractor personnel	13
Health and Safety requirements	13
Hazardous waste	15
Project Closeout.....	15
Warranty	15
Section VI. – Schedule of deliverables, invoicing	16
Section VII. – Administration	17
Right of removal	17
Transfer and delivery of information	17
General.....	17
Section VIII. – Appendices	Error! Bookmark not defined.

Section II. – General

Introduction

South Chancery Chilled Water System NCh branch cleaning

Project location

Address:

H-1054 Budapest, Szabadsag ter 10-12.

Summary of works

The contractor shall provide all management, supervision, administrative support, labor, materials, tools, parts, supplies, lubricants, equipment, barricades, signs, and transportation necessary to fulfill all the requirements of the SOW, unless otherwise specified in the documentation. All the works and procedures in the contract shall be performed in conformity to the specifications and drawings.

The SOW covers the following works in order:

- a) Fix Operation of SCh primary CWS #2 in manual mode
- b) Cleaning Sch non-operational primary Chilled water system #1 @ SCh attic
 - a. Close all motorized branch valves
 - b. Drain & Collect glycol-water mixture (appr. 1500-2000 liter)
 - c. Clean all strainers in the system
 - d. Backwash plate heat-exchangers
 - e. Flush system
 - f. 2nd clean of all strainers in the system
 - g. Filter through 20 micron filter and magnetic dirt separator the drained glycol-water mixture
- c) Cleaning former "Ch 2.1" system @ Roof to mezzanine
 - a. Open all valves (incl. AHU & FCU)
 - b. Drain & Collect glycol-water mixture (appr. 2500 liter)
 - c. Clean all strainers in the system
 - d. Backwash all heat-exchangers (FCU & AHU)
 - e. Open Motorized branch valves of SCh CWS#1 to NCh
 - f. Flush system Ch 2.1 including SCh primary CWS#1
 - g. 2nd Clean of all strainers in the system
 - h. Filter through 20 micron filter and magnetic dirt separator the drained glycol-water mixture
 - i. Refill system by adding sufficient propylene glycol in order to be frost protected till -18C (to be verified by refractometer)
- d) Cleaning former "R22 Ch" system @ Roof to Basement
 - a. Open all valves (incl. AHU & FCU)
 - b. Drain & Collect glycol-water mixture (appr. 2500 liter)
 - c. Clean all strainers in the system

- d. Backwash all heat-exchangers (FCU & AHU)
- e. Flush system
- f. 2nd Clean of all strainers in the system
- g. Filter through 20 micron filter and magnetic dirt separator the drained glycol-water mixture
- h. Refill system by adding sufficient propylene glycol in order to be frost protected till -18C (to be verified by refractometer)
- e) Refill Sch non-operational primary Chilled water system #1 @ SCh attic by adding sufficient propylene glycol in order to be frost protected till -18C (to be verified by refractometer)
- f) Change over SCh CWS operation from system #2 to system #1 (CWS #2 NCh branch valves to remain closed)
- g) Cleaning Sch non-operational primary Chilled water system #2 @ SCh attic
 - a. Drain & Collect glycol-water mixture (appr. 1500-2000 liter)
 - b. Clean all strainers in the system
 - c. Backwash plate heat-exchangers
 - d. Flush system
 - e. 2nd clean of all strainers in the system
 - f. Filter through 20 micron filter and magnetic dirt separator the drained glycol-water mixture
 - g. Refill Sch non-operational primary Chilled water system #2 @ SCh attic by adding sufficient propylene glycol in order to be frost protected till -18C (to be verified by refractometer)
- h) Place all valves back to original position
- i) Remove from site and handle properly the drained, used propylene- glycol mixture.

Period of performance

The contractor must be able to execute the construction works within the timeframe specified in this SOW.

The performance period of this contract shall be maximum (30) days from the issuance of the Notice to Proceed from contracting officer.

All lengths of time referenced in 'days' are in 'Calendar Days' unless otherwise specified. A calendar day is considered any day of a standard 7-day week starting from midnight and the following 24 hours. As an example, a deliverable due ten (10) calendar days after the first day of the month would be due on the 10th of the month.

Section III. – Technical requirements

General

The contractor shall provide all necessary management, supervision, administrative support, personnel, labor, materials, tools, parts, miscellaneous supplies, and equipment necessary to successfully perform the requirements contained in this SOW. The contractor shall execute the construction works described in the SOW in accordance with all current applicable local codes and regulations, manufacturers and installers recommendations and requirements described in this SOW unless otherwise directed in writing by the Embassy.

The contractor shall maintain an effective communication and coordination policy with the Embassy utilizing email, telephones, cameras etc. to ensure the Embassy is kept abreast of current status, schedule etc. for the term of the contract.

Contractor shall check on site the measurements and quantities of the work specified in the Scope of work and in Cost estimate (those are only informational purposes) -before contractor's price quote will be submitted. COR shall be notified in writing in case of any discrepancies are between Scope of Work & Cost estimate and site conditions, **before** contractor's price quote is submitted. Extra work cannot be claimed; the entire work has to be performed the contracted amount.

Order of precedence

Should a conflict in documentation arise, the Contractor shall notify the COR by RFI. If any conflict should arise, the following precedents shall prevail:

1. Code/Regulation
2. USG Requirements
3. Manufacturer Recommendation
4. Installer Recommendation

Calculation basis

According to designer estimation the total amount of systems to be drained are appr. 8400l. This includes 2pcs 1500l buffer tanks in the attic.

The current average propylene-glycol water mixture is sufficient to -10C Celsius.

Estimated amount of pure glycol addition needed is ~1100l.

NCH									
R22 chiller [94 kw SCH CWS]			GN param						
			Cooling Capacity [kW]	TOTAL Pcs	Basement	GF	Mezz	1F	Attic
			Total		[pcs]	[pcs]	[pcs]	[pcs]	[pcs]
	Main branch going into basement	AHU 1-2 (Cons G11)	9.81	1	1				
		AHU 2-1	4.91	1	1				
		AHU 1-1 -Cons. G16	32.6	1		1			
		FC 1	4.6	2			2		
		FC2	4.1	2			2		
		FC3	5.2	1			1		
		FC4	6.2	0					
		FC CAS-1 Daikin FWF02BF	1.5	2			2		
		FC B30 Galletti	3.5	2	2				
	DN54 branch	FC-Daikin FWS03AF	4.96	3			3		
Ch2-1 [144 kW]			Cooling Capacity [kW]	TOTAL Pcs	Basement	GF	Mezz	1F	Attic
			Total		[pcs]	[pcs]	[pcs]	[pcs]	[pcs]
		AHU 2-2 (2-3)	25.7	1					1
		AHU2-4	22	1					1
		FC 2-1	1.13	6				6	
		FC 2-2	1.55	2			1	1	
		FC 2-3	2.03	3				3	
		FC 2-4	2.55	3				3	
		FC 2-5	3.69	8			4	4	
		FC 2-6	4.28	1				1	
		FC 2-7	8	3				3	
		FC 2-8	1.55	3				3	
		FC 2-9	2.03	1				1	
		FC 4-1 - Carrier 42GW200D cassette	1.97	1				1	

Section IV. – Contract startup

Key contractor personnel

The contractor shall insure that all personnel employed in the performance of this contract are qualified and possess the necessary licenses required in their respective trades.

The contractor shall maintain an effective communication and coordination policy with the Embassy utilizing email, telephones, faxes, pagers, cameras etc. to ensure the Embassy is kept abreast of current status, schedule etc. for the term of the contract.

Documentation

The Contractor shall develop and submit for approval the deliverables described in this section.

- Detailed construction schedule:
The contractor shall provide the COR the detailed schedule of the construction works ten (10) days prior to the start date of the construction works.
- Site Access Information: Contractor shall request site access minimum 2 days in advance in written from COR.
- Safety Plan: The Contractor shall submit to the COR within 7 days a Site Safety and Health Plan (see Section V./07 Health and Safety Requirements).
- Submittal Register: The Contractor shall submit the data sheet of all materials within 3 workdays from NTP.
- Project Kick-Off Meeting: The Contractor will prepare an agenda for, hold, and preside over a kick-off meeting prior construction works began. The meeting topics shall include, but are not limited to:
 - o Safety Plan Review
 - o Security Requirements and Restrictions
 - o Quality Control Plan Review
 - o Schedule Review and Updates
 - o Site Survey Review
 - o Construction submittals register, process & requirements review

Permits and responsibilities

The contractor shall, without additional expense to the Embassy, be responsible for obtaining all necessary licenses and permits. The contractor shall also be responsible for all damages to persons or property that occur as a result of the contractor's negligence and shall take proper safety and health precautions to protect the work, the workers, the public and the property of others. In addition, the contractor shall be responsible for all materials delivered and work performed until completion and acceptance of the entire work.

The contractor shall comply with all applicable revisions, additions, changes and/or upgrades to any Federal, state, and municipal laws, codes, and regulations which are in effect on the date of contract and which affect the performance of the work. The contractor shall also obtain and pay

the costs of any royalties and licenses for any patented or copyrighted items used in the performance of the work.

It shall be the responsibility of the contractor to promptly notify the COR if an official in charge of compliance with the Occupational Safety and Health Act visits the work site.

Regulation requirements

The contractor shall comply with all applicable Federal, state, local, Embassy regulatory, code and procedural requirements. This shall include but not be limited to the contractor complying with the following Embassy requirements:

The Embassy's:

Orders and Instructions

Security, Traffic and Parking Requirements

Safety Procedures including Lockout/Tag out, Confined Space Entry, Hazardous Materials, Material Safety Data Sheets etc.

The contractor shall report all incidents and accidents immediately to the Embassy.

Handover of building site

After issuance of Notice To Proceed by contracting officer, the building site will be handed over by the Embassy to the Contractor at a previously agreed time, in writing. From the handover, Contractor is responsible for the site until the end of the works, and to maintain safe conditions on the site.

Quality of works

All works shall be executed in first class quality. If materials are not specified directly in the documentation, Contractor shall submit samples and data sheets/technical specifications for the review of the COR. If Contractor is planning to use a different material that is specified either in the technical documentation or this SOW, permit from the COR is necessary, and the technical equivalency shall be proven by contractor.

Section V. – Construction

On-Site Mobilization

General

After the approval of Construction Submittals relating to the first construction activities on-site mobilization shall begin.

Job Site Utilization Plan

The Job Site Utilization Plan shall provide guidance to the Contractor on expectations and job-site use. The creation of the Job Site Utilization Plan shall be done with input from the project specifications, the COR, Post, OBO, and the Contractor.

Routine Progress Meetings:

Routine progress meetings shall be scheduled in coordination between the COR, Post Staff, and the Contractor. An OBO representative shall reserve the option to join. The Contractor shall provide a standard Agenda, and a template for Meeting Minutes. These meetings will occur weekly, at a minimum, and be used to discuss the following topics:

- Safety Issues,
- Security Issues,
- Updated Schedule and Work Progress,
- Quality Control
- Submittal Register,
- Open Submittals,
- Open Comments,
- Open RFIs.

Escorts

- An escort shall be required at all times the Contractor is on-site. Post will coordinate and provide an escort for the Contractor. Procedures and plans shall be outlined in advance for the following, at a minimum:
 - Bathroom Breaks,
 - Lunch Breaks (12:00-13:00 daily),
 - Emergencies (Fire, Lockdown, Etc.),
 - After-hours work (before 8:00 or after 17:00 on weekdays, holidays)
 - Work in multiple locations at once (i.e., pulling cable).

Lay-Down Area

Material, toolbox, drawings, and other job-site material on-site storage shall be coordinated with Post prior to on-site mobilization. Post reserves the right to relocate the lay-down area as required. Post shall provide the Contractor at least 72 hours to move the material.

Trash, Waste, and Debris

Post is not responsible for the removal of trash, waste, or debris produced by the Contractor. The Contractor is responsible for the daily removal of debris from the jobsite. All debris and waste shall be disposed in a manner that is approved by local code and law.

Cleanliness

The facility represents the United States Government and is host to diplomats, dignitaries, and senior Government officials. The job site shall be cleaned, clear of debris, and organized prior to the end of each workday. Failure to adequately clean and organize the jobsite may result in the use of professional cleaning services being utilized by Post at the Contractor's expense.

All work, either in progress or in a completed state under this contract, shall be continuously protected by the contractor against damage, and shall be so secured as to preclude any accident or damage to adjacent property or personnel, until turned over to and accepted by the Government. Upon completion of the renovation of the floor, the Contractor shall thoroughly clean the entire construction area prior to turnover to the GOV.

Bathrooms

The COR will designate specific bathrooms for use during Construction. Only these bathrooms shall be used by the Contractor during the project unless otherwise directed by the COR. In case of currently occupied property, Contractor shall supply a mobile toilet with hand wash.

Arrival and Departure

During the course of the day, Contractor personnel will arrive and depart. Due to escort requirements at Post, the Contractor is asked to arrive and depart in groups to ease the demands on Post escorts. Where possible Contractor arrivals, departures, and breaks shall all be taken at the same time.

Standard work day will start normally at 08:00 AM (depending on the availability it is possible to start at 07:00 AM, but the Embassy cannot guarantee after hours escorting) and end no later than 17:00 PM. Escort services will be provided by the Embassy, working unescorted is not possible.

No work on site shall be commenced without the COR's approval on the work schedule to be submitted by the contractor. No work on site shall be performed on Hungarian and American holidays, Saturdays and Sundays.

Delivery of Material, Tools, and Supplies

Supplies, tools, and materials may require additional screening and delivery coordination. The method for delivery, vehicle access, etc. shall be determined in advance.

Hot Work Permits

In case of fire hazardous works, Contractor, Post, and the COR shall coordinate the process for Hot Work Permits issued by the Embassy's H&S coordinator.

Temporary structures, scaffoldings

Advance approval by the COR and Embassy H&S Coordinator is required for scaffoldings and/or bucket cranes or any temporary structures necessary to accomplish the renovation.

Electrical Shutdowns

The Contractor, Post, and the COR shall coordinate the process for Electrical Shutdown Procedures.

Water Shutdowns

The Contractor, Post, and the COR shall coordinate the process for Water Shutdown Procedures.

After-Hours Work

It shall be determined what work will take place after hours. For work that must take place after hours, the process for coordination of this effort shall be coordinated in advance.

Building Maintenance

Once the Contractor begins demolition and construction work on a system, the Contractor shall operate that system and maintain occupant comfort until Final Acceptance. The method by which, and process by which Post and the Contractor work to fulfill this obligation shall be coordinated and clarified.

Inspection

Post Staff, OBO, the CO, and the COR may subject the works to an inspection for safety, security, and quality assurance purposes at any time. The Contractor shall coordinate how he/she will coordinate working with inspectors.

Utilities

Utilities (electric power, water, sewage) will be provided on site by the Embassy (if available).

Security, and other requirements

Contractor shall respect all security requirements for procedures and technology of the Embassy during site works work. The building and parking area shall be accessible for tenants/visitors/embassy workers during the whole period of site works.

Contractor shall make an effort for preserving the existing condition of area not directly affected by the works. This includes furniture & wall/floor covers & equipment. The street covers need to be protected with strong plastic foil layers if it is necessary. In case of damage Contractor will be held responsible for the cleaning or the repair of the damages.

If dust is expected as an effect of the works, Contractor must install a thick plastic sheet protector on those windows/doors, wall covers thus separating the construction area. Contractor is responsible for the proper signage to be placed.

Smoking is forbidden in building! Parking is only allowed at dedicated spaces!

Materials:

All the materials to be used for the contract work shall meet or exceed European Union of Agreement (UEAtc) standards.

Hazardous Materials

The contractor shall provide the COR a hazardous material (HM) inventory and safety data sheets (SDS) in English before such HM comes to the work site.

Inspection and Acceptance by COR:

The COR, or COR's designee has a right to inspect and test all work called for by the contract, therefore, the Contractor shall accept the inspections by the COR or COR's designee. If any of the work does not conform to the contract requirements, the Government may require the Contractor to perform the services again in conformity with the contract requirements, at no additional cost to the Government.

Demolition and Construction activities

Demolition and construction activities shall be performed in accordance with the project Construction Documents and approved submittals.

Contractor personnel

The contractor's personnel shall be experienced in the works similar to the works described in this SOW.

The contractor's personnel shall present a neat appearance and be easily recognized as contractor employees. All personnel shall portray a professional image at all times. Clothing and shoes shall be worn in accordance with AFOSH and OSHA standards, and local labor regulations for occupational safety and health. The Contractor will ensure their personnel use proper protection/safety equipment when performing work. Contractor employees shall not remove any part of their clothing, such as shirts, shoes, etc., while in performance of the contract.

The contractor's personnel shall conduct themselves in a professional, orderly and safe manner at all times while on the job site.

Health and Safety requirements

The Contractor bears sole responsibility for health and safety of his/her employees. The Contractor is expected to take all steps necessary to establish, administer, and enforce safety, fire prevention and environmental prevention rules that meet the regulatory requirements, rules and practices.

This responsibility stands for any subcontractors may be involved by the Contractor.

The Contractor shall perform all works in accordance with U.S. codes and Hungarian standards, such as National Fire Prevention Association (NFPA); current edition USACE Safety & Health Requirements Manual EM385-1-1; both US and Hungarian Work Safety Rules. Should there be a discrepancy between the US and Hungarian specifications, the more stringent of the two shall govern.

Before work may proceed, the contractor must obtain approval from the COR of the written safety plan required by FAR 52.236-13, Accident Prevention Alternate I, containing specific hazard mitigation and control techniques.

Safety Plan: The plan required by paragraph above shall be known as the Site Safety and Health Plan (SSHP) and shall address any high-risk activities, or as otherwise required by the contracting officer/COR.

The SSHP shall be submitted prior to commencing any activity at the site.

High-Risk Activities. If the project contains any of the following high-risk activities, the Contractor shall follow the section in the latest edition, as of the date of the solicitation, of the U.S. Army Corps of Engineers Safety and Health manual, EM 385 1 1, that corresponds to the high-risk activity.

1. Scaffolding;
2. Work at heights above 1.8 meters;
3. Trenching or other excavation greater than one (1) meter in depth;
4. Earth-moving equipment and other large vehicle
5. Cranes and rigging;
6. Welding or cutting and other hot work;
7. Partial or total demolition of a structure;
8. Temporary wiring, use of portable electric tools, or other recognized electrical hazards. Temporary wiring and portable electric tools require the use of a ground fault circuit interrupter (GFCI) in the affected circuits; other electrical hazards may also require the use of a GFCI;
9. Work in confined spaces;
10. Hazardous materials - a material with a physical or health hazard including but not limited to flammable, health or physical hazards;
11. Hazardous noise levels as required in EM 385-1 Section 5B or local standards if more restrictive.
12. The contractor, its employees, or subcontractors or their employees shall not bring, produce, use, or store on the job site any hazardous or carcinogenic products without prior written approval by the Embassy.

The plan must address developing activity hazard analyses (AHAs) for specific tasks. Work shall not begin until the AHA for the work activity has been accepted by the COR and discussed with all engaged in the activity, including the Contractor, subcontractor(s), and Government on-site representatives.

Based on hazard assessments, Contractors shall provide or afford each affected employee personal protective equipment (PPE) that will protect the employee from hazards. Workers must properly use all provided PPE.

The Contractor must conduct the appropriate training for their employees prior to starting work. Verification of current employee training shall be maintained at the job location for all employees present and be made available upon request.

In case of breach of work safety requirements project will be stopped by Contracting Officer, with all side costs for the Contractor's expense.

All incidents, injuries and property damages must be reported to the COR and appropriate regulatory agencies. In case of injuries the Contractor must investigate and involve the Embassy into the procedure. Failure of reporting/investigation will result the disclaim of all responsibility of the Embassy.

[Hazardous waste](#)

All hazardous and/or carcinogenic waste transported or generated on-site by the contractor must be properly disposed of the site by the contractor as required by law and at no cost to the Embassy.

The contractor shall initiate Hazardous Waste Management training and enforcement programs to ensure employees are aware that the domestic drains, and storm drains shall not be used to dispose of gasoline, paint, thinners, hydraulic fluid, solvents, concentrated cleaning agents and other toxic material.

The contractor is responsible for collecting, accumulating, recycling, and/or off-site disposal of its hazardous and toxic waste off site in compliance with Federal, state and local laws governing hazardous waste storage and disposal.

The contractor shall provide the contracting Officer and the COR with documentation of hazardous materials or wastes that are accumulated, handled, generated, or disposed of by the contractor's operations. The documentation shall demonstrate the adequacy of the handling and disposal operations used by the contractor and will demonstrate that the contractor activities will not result in contamination of site properly.

[Project Closeout](#)

The Contractor shall execute the construction, commissioning, and closeout of the project in accordance with the requirements of the contract.

[Warranty](#)

The contractor shall guarantee materials and workmanship of the work completed under this contract for a five-year period from the date of the Government's acceptance of the completed work. During this period, the Contractor shall correct and repair, at his own expense, any damages that may occur in connection with the work performed under this contract. The Contractor shall provide all labor, materials, and equipment, at their own expense, to perform the repair. The repair must be completed within four (4) weeks from Notice of Damage(s).

Section VI. – Schedule of deliverables, invoicing

Table 3: Schedule of Deliverables contains a list of the deliverables required as part of this SOW. This schedule does not include all submittals required as part of the Construction Submittal process. **The exact content, and the required submittals will be discussed with COR on project startup.**

Table 3: Schedule of Deliverables

Number	Description	Number of Copies	Due	Format
1	Contractor Site Access Information	1	At Award	Electronic
3	Baseline Project Execution Schedule	1	@ Kick-off meeting	Electronic

The contractor shall submit its invoices based on the actual progress of the works completed to the satisfaction of the COR. Contractor is only authorized to issue an invoice after the receiving a signed Acceptance of Service from the COR. The Embassy shall incur no obligation for out of scope work that is not authorized. The Embassy reserves the right to withhold a portion of the payment to the extent the contractor has not fulfilled the requirements of the SOW for the time/progress was performed.

Upon finishing the works, Contractor shall provide the As-Built documentation of the works, containing the technical data sheets of the built-in materials, and instructions for use and maintenance. Contractor shall hand over the building site and the as built documentation to the Embassy before receiving the final acceptance of service.

Section VII. – Administration

Right of removal

The CO, COR, RSO reserve the right to order the immediate removal of any Contractor staff from Post for any reason.

Transfer and delivery of information

General

All delivery of documentation or submittals requires a letter of transmittal. It is the responsibility of the Contractor to obtain a signed copy of the transmittal letter for proof of delivery when the delivery is by any method other than digital/online as proof of delivery.

All deliverables are required to have the following information, at a minimum, included. Failure to provide the information below shall result in deliverables being rejected.

- Date of Delivery / Submission,
- Project Name,
- Contract Number,
- Company Name, Company Address, Company Contact Information,
- Security Classification (Unclassified or SBU),